

CLAIMS

A method of communicating between a MAC and a PHY comprising:

sending a 100 MHz time-division multiplexed signal on a receive data

line;

sending a time-division multiplexed receive control signal on a receive

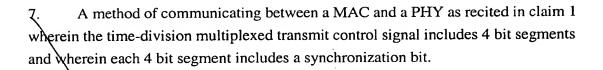
control line

sending a 100 MHz time-division multiplexed signal on a transmit data

line;

sending a time-division multiplexed transmit control signal on a transmit control line.

- 2. A method of communicating between a MAC and a PHY as recited in claim 1 wherein the time-division multiplexed receive control signal includes 4 bit segments and wherein each 4 bit segment includes a synchronization bit.
- 3. A method of communicating between a MAC and a PHY as recited in claim 2 wherein the receive data line includes 4 bit segments and wherein the beginning of a 4 bit segment is determined by the synchronization bit.
- 4. A method of communicating between a MAC and a PHY as recited in claim 1 wherein the time-division multiplexed receive control signal includes 4 bit segments and wherein each 4 bit segment includes a receive data valid bit.
- 5. A method of communicating between a MAC and a PHY as recited in claim 1 wherein the time-division multiplexed receive control signal includes 4 bit segments and wherein each 4 bit segment includes a receive error bit.
- 6. A method of communicating between a MAC and a PHY as recited in claim 1 wherein the time-division multiplexed receive control signal includes 4 bit segments and wherein each 4 bit segment includes a carrier sense bit.



- 8. A method of communicating between a MAC and a PHY as recited in claim 7 wherein the transmit data line includes 4 bit segments and wherein the beginning of a 4 bit segment is determined by the synchronization bit.
- 9. A method of communicating between a MAC and a PHY as recited in claim 1 wherein the time-division multiplexed transmit control signal includes 4 bit segments and wherein each 4 bit segment includes a transmit enable bit.
- 10. A method of communicating between a MAC and a PHY as recited in claim 1 wherein the time-division multiplexed transmit control signal includes 4 bit segments and wherein each 4 bit segment includes a transmit error bit.
- 11. A method of communicating between a MAC and a PHY as recited in claim 1 further including indicating the speed of the PHY using the receive data line.
- 12. A method of communicating between a MAC and a PHY as recited in claim 11 wherein indicating the speed of the PHY using the receive data line includes including an interface speed bit in a data segment when a receive control segment indicates no carrier sense, no receive data valid and no receive error.
- 13. A method of communicating between a MAC and a PHY as recited in claim 1 further including buffering data transmitted from the PHY to the MAC using an elasticity buffer that is at least 27 bits long.
- 14. A method of communicating between a MAC and a PHY as recited in claim 1 further including buffering data transmitted from the PHY to the MAC using an elasticity buffer that long enough to buffer an entire frame of data from a data source having a clock with a frequency tolerance of 0.1%.

Sund.

a time-division multiplexed receive data line;

a time-division multiplexed receive control line;

atime-division multiplexed transmit data line;

a time-division multiplexed transmit control line.

16. A MAC to PHY interface consisting essentially of:

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a common clock;

a time-division multiplexed receive data line;

a time-division multiplexed receive control line;

a time-division multiplexed transmit data line;

a time-division multiplexed transmit control line.

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